Chesterfield County
Department of Building Inspection
(804) 748-1057
www.chesterfield.gov/bi

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6/5/2006

BASEMENT WALLS

The International Residential Code (IRC) provides prescriptive, structural information on constructing basement walls. The construction documents must provide enough information for the plan reviewer to verify compliance.

All houses with exterior foundation walls retaining more than 4 feet of unbalanced fill (i.e. the basement wall is at least 4 feet below grade) shall provide the following information on the construction documents:

1. All four elevations shall show:
   A. Approximate grade,
   B. Exterior door and window openings in the foundation wall,
   C. Window wells, if appropriate.

2. Foundation wall design shall be specified using one of the three listed methods:
   A. **Engineered Design** – A registered design professional may design the basement wall, including wall systems such as Superior Wall or ICF walls. The design shall include a "worst case" full height section drawing of the wall(s), including:
      1. Dimensions from the top of the basement slab or crawl space grade, as applicable, to the underside of the first floor framing,
      2. Maximum backfill height and material(s) against the wall,
      3. Reinforcement (horizontal and vertical),
      4. Wall thickness and material(s).

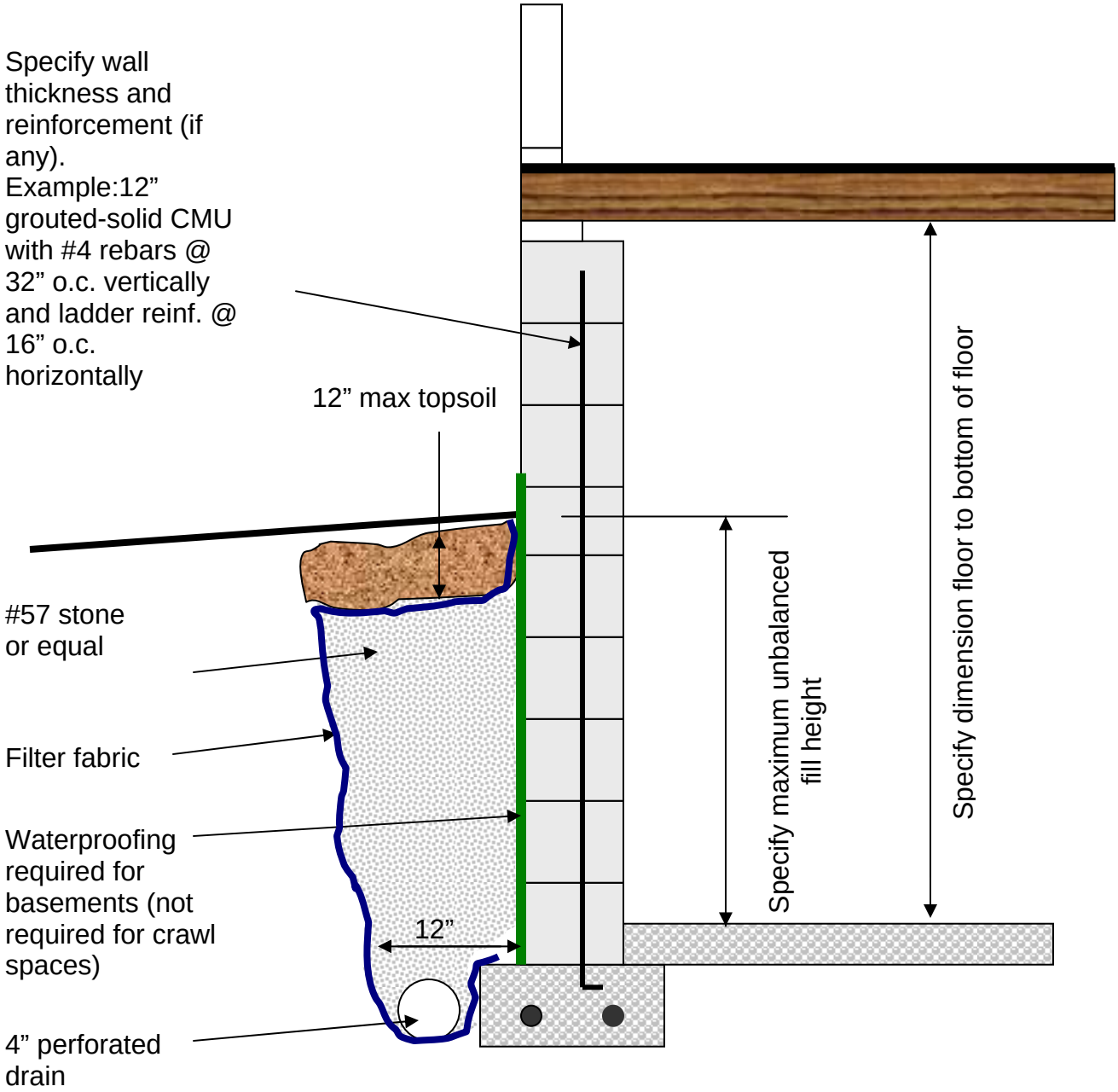
   B. **Granular Fill Design** -The contractor shall provide a sketch (similar to the one attached). The design shall include a "worst case" full height section drawing of the wall(s), including:
      1. Dimensions from the top of the basement slab or crawl space grade, as applicable, to the underside of the first floor framing,
      2. Maximum backfill height and material(s) against the wall,
      3. Masonry or concrete wall thickness (and all reinforcing if any),
      4. Footing and foundation drainage system,
      5. Granular fill material shall extend from the top of the footing projection to a height that is within 12 inches of the exterior finished grade and shall be #57 stone (or other granular material, such that less than 5% of the material will pass a # 200 sieve),
      6. Filter fabric shall be installed so as to cover the granular fill and protect the granular fill from the infiltration of fines,

7. The granular fill shall be placed such that it measurers a minimum of 12 inches in width from the face of the foundation wall at the top of the footing projection and increases in width a sufficient amount to facilitate construction of the foundation wall.

C. **IRC Section 404.1 Design** - Provide the specific information required to comply with the requirements of IRC Section 404.1, and tables R404.1.1 (1)-(4). The design shall include a "worst case" full height section drawing of the wall(s), including:

1. Dimensions from the top of the basement slab or crawl space grade, as applicable, to the underside of the first floor framing,
2. Maximum unbalanced fill height against the wall,
3. The soil classification designation from IRC table R405.1 (GW, GP, SW, SP, GM, SM, GC, SC, ML, CL, CH, MH, OL, OH, Pt),
4. Designate whether the wall will be constructed of hollow masonry units, solid masonry units, grouted-solid masonry units or concrete,
5. Wall thickness,
6. Reinforcement if necessary (horizontal or vertical).

3. The following inspections will be required and shall be performed by the Chesterfield County Department of Building Inspections:
   A. "Waterproofing and Drainage" inspection,
   B. "Poured Wall Inspection" for concrete walls and reinforced masonry walls (prior to grouting).



After

EXAMPLE SKETCH SHOWING MINIMUM INFORMATION REQUIRED ON A DRAWING FOR “GRANULAR FILL DESIGN AND FOUNDATION WALLS RETAINING MORE THAN 4 FEET OF UNBALANCED FILL”